

# LIQUID CRYSTAL DISPLAY DEVICE

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**Inventor:** HIYAMA IKUO; ADACHI MASAYA; TSUMURA MAKOTO

**Applicant:** HITACHI LTD

**Classification:**

- **international:** **G02F1/1335; G02F1/13357; G02F1/13;** (IPC1-7): G02F1/13357

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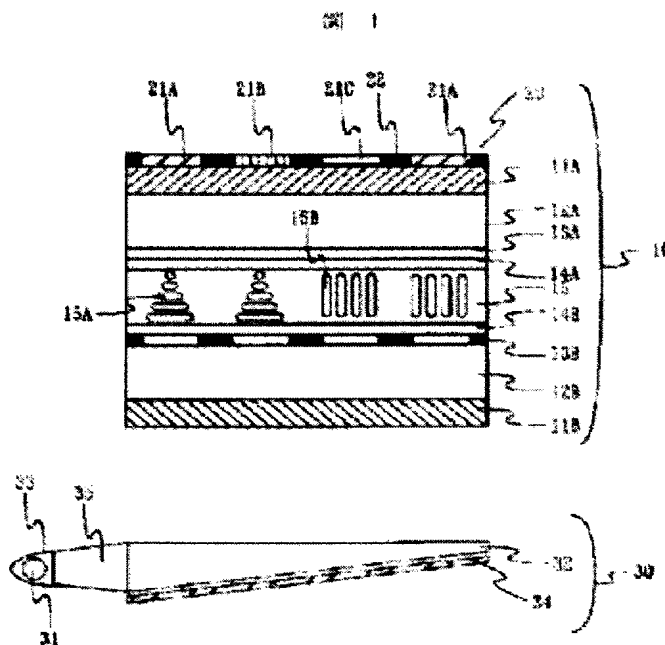
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## Abstract of JP2001125097

**PROBLEM TO BE SOLVED:** To provide a liquid crystal display device having a phosphor disposed on the liquid crystal display face and showing a high contrast ratio and high resolution so as to realize high luminance and a wide viewing angle.

**SOLUTION:** The liquid crystal display device is equipped with a liquid crystal display element having a pair of selecting means for polarized light which controls the state of polarized light and controls the incident light to a phosphor to display an image, and an illumination device on the back of the element. The illumination device is equipped with a light source having the emission peak wavelength of  $\geq 380$  nm and  $\leq 500$  nm and  $\leq 50$  nm halfwidth (the wavelength range giving 1/2 intensity of the peak), and with a collimating means to increase the collimating property of the light from the light source. The direction of the light exiting from the illumination device is almost coincident with the direction where the transmittance of the liquid crystal display device is minimum when the light is cut. The twist angle of the liquid crystal layer of the liquid crystal display element ranges  $\geq 0$  deg. and  $\leq 90$  deg.. The display with a high contrast ratio and high resolution is realized with this constitution.



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